

REMARKS:

Claims 1-6 are pending. By this Amendment, claim 6 is hereby amended to correct a typographical error and claims 1-5 remain unchanged and in their original form.

Claims 1-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,439,888 (“Boutoussov et al.”) in view of U.S. Patent No. 6,419,483 (“Adam et al.”).

Independent claim 1 recites:

A resin curing apparatus comprising:

a light source which is an LED array including a plurality of LEDs each of which outputs a light ray having a predetermined wavelength, said respective LEDs being arranged in said LED array in such a manner that traveling directions of light rays emitted by said respective LEDs become the same direction, and driven by a drive electric current larger than a rated electric current within a predetermined time period;

a guide member for guiding a light ray from said light source to a predetermined position; and

a cooling fan for forcibly cooling said LED array and a drive motor of said cooling fan itself.

Boutoussov et al. does not teach or suggest, among other things, LEDs being arranged in an LED array in such a manner that traveling directions of light rays emitted by said respective LEDs become the same direction. Rather, Boutoussov et al. discloses a reflector 240 that is not intended to change the traveling direction of a light beam passing through the gap between the reflector 240 and the heat sink 270, and therefore the light rays emitted by the LED 210 of Boutoussov et al. do not become the same direction. Reference is made to Fig. 3A of the present application where the light rays emitted by the LED array of the present invention become the same direction.

In addition, and as acknowledged by the Examiner, Boutoussov et al. does not teach or suggest LEDs being driven by a drive electric current larger than a rated electric current within a predetermined time period.

Adam et al. does not cure the deficiencies of Boutoussov et al. More particularly, Adam et al. does not teach or suggest, among other things, an LED array. Adam et al. only teaches a single LED. In fact, Adam et al. teaches away from including an LED array because the purpose of Adam et al. is to make the LED disposable after each patient and such disposal is economical. Including an LED array and disposing of a plurality of LEDs after each patient would not be economical. Accordingly, Adam et al. teaches away from including an LED array as claimed in independent claim 1.

In addition, Adam et al. does not teach or suggest, among other things, LEDs being arranged in an LED array in such a manner that traveling directions of light rays emitted by said respective LEDs become the same direction. Because Adam et al. does not include a plurality of LEDs, it is impossible for light rays emitted by separate LEDs to become the same direction because Adam et al. only discloses a single LED.

Further, Adam et al. does not teach or suggest, among other things, that the light source is driven by a drive electric current larger than a rated electric current. Adam et al. merely discloses that the LEDs are used as a light source and said LEDs are overdriven. Nothing is mentioned with Adams et al. of drive electric currents or rated electric currents.

For these and other reasons, Boutoussov et al. and Adam et al., alone or in combination, do not teach or suggest the subject matter of independent claim 1. Accordingly independent claim 1 is allowable. Claims 2-6 depend from independent claim 1 and are allowable for the same and other reasons as independent claim 1. In addition, the Examiner did not address the subject matter of dependent claims 2-6. Applicant believes claims 2-6 are allowable over the references of record and, in absence of comments from the Examiner to the contrary, claims 2-6 should be allowable.

Nonetheless, Applicant believes dependent claims 2-6 are additionally allowable for the reasons set forth below.

Dependent claim 2 depends from independent claim 1 and further recites that a wavelength of a light ray emitted by each of said LEDs is 370 to 480 nm. As discussed above, Boutousov et al. and Adam et al. do not teach or suggest the subject matter of independent claim 1. Boutousov et al. and Adam et al. also do not teach or suggest a wavelength of a light ray emitted by each of the LEDs is 370 to 480 nm. For these and other reasons, dependent claim 2 is allowable.

Dependent claim 3 depends from independent claim 1 and further recites an LED drive circuit capable of supplying a predetermined drive electric current to each of said LEDs in said LED array, wherein said cooling fan can also cool down said LED drive circuit. As discussed above, Boutousov et al. and Adam et al. do not teach or suggest the subject matter of independent claim 1. Boutousov et al. and Adam et al. also do not teach or suggest an LED drive circuit. Nowhere in Boutousov et al and Adam et al. is an LED drive circuit disclosed. In addition, Boutousov et al. and Adam et al. do not teach or suggest an LED drive circuit capable of supplying a predetermined drive electric current to each of said LEDs in said LED array. Because Boutousov et al. and Adam et al. do not disclose an LED drive circuit, they cannot disclose a circuit capable of supplying a predetermined drive electric current to each of said LEDs in an LED array. Further, Adam et al. does not teach or suggest any cooling fan. Boutousov et al. and Adam et al. do not teach or suggest, among other things, a cooling fan that cools down an LED drive circuit. Again, since Boutousov et al. and Adam et al. do not disclose an LED drive circuit, they cannot cool something they don't have. For these and other reasons, dependent claim 3 is allowable.

Dependent claim 4 depends from dependent claim 2, which depends from independent claim 1, and recites similar subject matter to that of dependent claim 3. Accordingly, dependent claim 4 is allowable over Boutoussov et al. and Adam et al. for at least the same reasons as claims 1-3.

Dependent claim 5 depends from independent claim 1 and further recites that the predetermined time period is controlled by a timer based on a ratio of the drive electric current to the rated current. As discussed above, Boutoussov et al. and Adam et al. do not teach or suggest the subject matter of independent claim 1. Boutoussov et al. and Adam et al. also do not teach or suggest, among other things, a predetermined time period controlled by a timer based on a ratio of a drive electric current to a rated current. Nowhere in Boutoussov et al. and Adam et al. is control of a predetermined time period or a timer based on a ratio of drive electric current to rated current mentioned. For these and other reasons, dependent claim 5 is allowable.

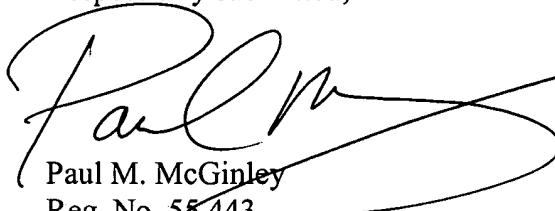
Dependent claim 6 depends from dependent claim 2, which depends from independent claim 1, and recites similar subject matter to that of dependent claim 5. Accordingly, dependent claim 6 is allowable over Boutoussov et al. and Adam et al. for at least the same reasons as claims 1, 2, and 5.

CONCLUSION:

In view of the foregoing, consideration of the Amendment and allowance of Claims 1-6
are respectfully requested.

The undersigned is available for telephone consultation during normal business hours.

Respectfully submitted,



Paul M. McGinley
Reg. No. 58,443
Lisa C. Childs
Reg. No. 39,937

Docket No. 204126-0085-01
Michael Best & Friedrich LLP
Two Prudential Plaza
180 North Stetson Avenue, Suite 2000
Chicago, IL 60601
(312) 222-0800